AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application:

Claims 1-51 (Cancelled).

52. (Currently Amended) ~~The fuel cell power system according to claim 51~~ A fuel cell power system comprising:

a housing;

a plurality of terminals;

at least one fuel cell within the housing and electrically coupled with the terminals and configured to convert chemical energy into electricity;

a control system configured to monitor an electrical output condition of the at least one fuel cell and to control an operational parameter of at least one of the fuel cells, and wherein the control system comprises a plurality of distributed controllers; and

an operator interface coupled with the control system to indicate the electrical condition monitored by the control system.

53. (Currently Amended) The fuel cell power system according to claim ~~51~~ 52 wherein the at least one fuel cell comprises a plurality of polymer electrolyte membrane fuel cells.

54. (Currently Amended) The fuel cell power system according to claim ~~51~~ 52 wherein the at least one fuel cell comprises a plurality of fuel cells.

55. (Original) The fuel cell power system according to claim 54 wherein the fuel cells are configured to be individually selectively deactivated and remaining ones of the fuel cells are configured to provide electricity to the terminals with others of the fuel cells deactivated.

56. (Currently Amended) The fuel cell power system according to claim ~~51~~ 52 wherein the operator interface is positioned for observation from the exterior of the housing.

57. (Currently Amended) The fuel cell power system according to claim ~~51~~ 52 wherein the operator interface comprises a display configured to emit a human perceptible signal.

58. (Currently Amended) The fuel cell power system according to claim ~~51~~ 52 wherein the operator interface comprises interface switches configured to receive operator inputs.

59. (Twice Amended) A fuel cell power system comprising:

a plurality of terminals;

a plurality of fuel cells respectively electrically coupled with the terminals and configured to convert chemical energy into electricity, the fuel cells being configured to be individually selectively deactivated and remaining ones of the fuel cells being configured to provide electricity to the terminals with others of the fuel cells deactivated;

a power supply, different from the fuel cells; and

a control system coupled to the power supply and configured to receive electricity from the power supply at least at some times, and which is further operably coupled with the plurality of fuel cells, the control system being configured to monitor at least one operational condition of the power supply.

60. (Original) The fuel cell power system according to claim 59 wherein the control system comprises a plurality of distributed controllers.

61. (Original) The fuel cell power system according to claim 59 wherein the at least one fuel cell comprises a plurality of polymer electrolyte membrane fuel cells.

Claims 62-64 (Cancelled).

65. (Original) The fuel cell power system according to claim 59 wherein the power supply includes a battery.

66. (Original) The fuel cell power system according to claim 65 further comprising charge circuitry configured to selectively charge the battery responsive to control from the control system.

67. (Original) The fuel cell power system according to claim 59 further comprising an operator interface and the control system is configured to control the operator interface to indicate the at least one operational condition.

Claims 68-75 (Cancelled).

76. (Currently Amended) ~~The fuel cell power system according to claim 75~~ A fuel cell power system comprising:

a plurality of terminals;

a plurality of fuel cells electrically coupled with the terminals and configured to convert chemical energy into electricity;

a main valve adapted to couple with a fuel source and configured to selectively supply fuel to the fuel cells; and

a control system configured to control the main valve, and wherein the control system comprises a plurality of distributed controllers.

77. (Currently Amended) The fuel cell power system according to claim ~~75~~ 76, and wherein the fuel cells comprise polymer electrolyte membrane fuel cells.

78. (Currently Amended) The fuel cell power system according to claim ~~75~~ 76, and wherein the fuel cells are configured to be individually selectively deactivated and the remaining ones of the fuel cells are configured to provide electricity to the terminals with others of the fuel cells deactivated.

79. (Currently Amended) The fuel cell power system according to claim ~~75~~ 76 and further comprising a plurality of auxiliary valves configured to selectively supply fuel to the respective fuel cells.

Claims 80-262 (Cancelled).

263. (Currently Amended) ~~The system according to claim 32~~ A fuel cell power system comprising:

a housing;

a plurality of terminals;

at least one fuel cell within the housing and which is electrically coupled with the terminals and which is configured to convert chemical energy into electricity, and wherein the at least one fuel cell comprises a plurality of fuel cells provided in a plurality of cartridges;

a bleed valve configured to selectively purge non-fuel diluents from the at least one fuel cell;

a control system configured to control selective positioning of the bleed valve, ~~the system further comprising~~; and a manifold configured to provide fluid communication of the cartridges with the bleed valve.

264. (Currently Amended) The system according to claim ~~32~~ 263, and further comprising a bleed timer, and wherein the control system is configured to access the bleed timer to control the operation of the valve.

265. (Currently Amended) The system of claim ~~32~~ 263, and further comprising an operator interface coupled to the control system, and wherein the operator

interface comprises a display configured to indicate ~~the~~ an electrical condition of at least one of the plurality of fuel cells.

266. (Currently Amended) ~~The system of claim 51 and comprising~~ A fuel cell power system comprising:

a housing;

a plurality of terminals;

a plurality of fuel cells, within the housing, and electrically coupled with the terminals and configured to convert chemical energy into electricity, and wherein the plurality of fuel cells are defined by multiple cartridges removably supported by the housing and that are individually selectively removed from the housing and remaining ones of the fuel cells are configured to provide electricity to terminals with others of the cartridges removed;

a control system configured to monitor an electrical output condition of the at least one of the fuel cell and to control an operational parameter of at least one of the fuel cells; and

an operator interface coupled with the control system to indicate the electrical condition monitored by the control system.

Claims 267-268 (Cancelled).

269. (Currently Amended) ~~The fuel cell power system according to claim 267 and further comprising~~ A fuel cell power system comprising:

a housing;

a temperature sensor supported by the housing to sense temperature in the housing;

a fan supported by the housing to move air inside the housing;

a plurality of terminals;

at least one fuel cell within the housing and electrically coupled with the terminals and configured to convert chemical energy into electricity;

a control system coupled to the temperature sensor and configured to control the fan in response to the sensed temperature;

an operator interface coupled with the control system to indicate the temperature sensed by the control system; and

circuitry electrically coupled to the control system, and configured to at least, at times, determine the output voltage of the at least one fuel cell, and wherein the control system is configured to determine electrical efficiency based ~~on~~ upon the output voltage, and wherein the fan is a variable speed fan, and wherein the control system varies the speed of the fan in response to the determined electrical efficiency.

270. (Currently Amended) The fuel cell power system according to claim 269 and further comprising a plurality of fuel cells, and wherein voltage output determining circuitry is provided for each fuel cell, and wherein the control system is configured to determine the efficiency of each fuel cell by dividing the output voltage of that fuel cell by a theoretical maximum voltage of a single fuel cell.

271. (Currently Amended) The fuel cell power system according to claim 270, and wherein the control system is configured to determine an average efficiency for the fuel cells, and to control the speed of the fan based ~~on~~ upon the average efficiency.

272. (Currently Amended) The fuel cell power system according to claim ~~267~~ 269 and further comprising a temperature sensor supported by the housing to detect temperature outside the housing, and which is electrically coupled to the control system.

273. (Currently Amended) The fuel cell power system according to claim 272 and further comprising an air passage, supported by the housing and which extends between the inside of the housing and the ambient, and further including a vane which is controllably movable between an open position, and a closed position, and wherein the position of the vane is controlled by the control system at least partially in response to the temperature outside the housing.

274. (Currently Amended) The fuel cell power system according to claim ~~267~~ 269, and wherein the control system comprises a plurality of distributed controllers.

Claims 275-276 (Cancelled).

277. (Currently Amended) The fuel cell power system according to claim ~~267~~ 269 and further comprising a plurality of fuel cells, and wherein the fuel cells are configured

to be individually selectively deactivated and remaining ones of the fuel cells are configured to provide electricity to the terminals with others of the fuel cells deactivated.

278. (Currently Amended) The fuel cell power system according to claim 267 and further comprising a plurality of fuel cells, and wherein the fuel cells are defined by multiple cartridges removably supported by the housing and ~~that~~ which are further individually selectively ~~removed~~ removable from the housing ~~and~~ while the remaining ~~ones of the~~ fuel cells are configured to provide electricity to the terminals ~~with others of the cartridges removed~~.

Claims 279-281 (Cancelled).

282. (Original) A fuel cell power system comprising:

a housing;

a plurality of terminals;

at least one fuel cell within the housing and electrically coupled with the terminals and configured to convert chemical energy into electricity;

a bleed valve in fluid communication with the at least one fuel cell to selectively remove waste fluid therefrom;

a control system configured to monitor an electrical output condition of at least one of the fuel cells and to control the bleed valve; and

an operator interface coupled with the control system to indicate the electrical condition monitored by the control system.

283. (Original) The fuel cell power system according to claim 282 and further comprising a main valve in fluid communication with the at least one fuel cell and configured to be coupled between a fuel source and the at least one fuel cell, to control the supply of fuel to the at least one fuel cell, and wherein the control system is further configured to control the main valve.

284. (Original) The fuel cell power system according to claim 282 and further comprising a fuel gas sensor supported by the housing to detect the concentration of fuel gas inside the housing, and wherein the control system is electrically coupled to the fuel gas sensor.

285. (Original) The fuel cell power system according to claim 282 wherein the control system comprises a plurality of distributed controllers.

286. (Original) The fuel cell power system according to claim 282 wherein the at least one fuel cell comprises a polymer electrolyte membrane.

287. (Original) The fuel cell power system according to claim 282 and comprising a plurality of fuel cells, wherein the fuel cells are configured to be individually selectively deactivated and remaining ones of the fuel cells are configured to provide electricity to the terminals with others of the fuel cells deactivated.

288. (Original) The fuel cell power system according to claim 282 and comprising a plurality of fuel cells, wherein the fuel cells are defined by multiple cartridges removably supported by the housing and that are individually selectively removed from the housing and remaining ones of the fuel cells are configured to provide electricity to the terminals with others of the cartridges removed.

289. (Original) The fuel cell power system according to claim 282 wherein the operator interface is positioned for observation from the exterior of the housing.

290. (Currently Amended) A fuel cell power system comprising:

a housing having an inside facing surface defining a cavity, and an outside facing surface and having a plurality of receptacles which are accessible from outside of the housing, the individual receptacles ~~respectively~~ including an electrical connector and a fuel supply connector;

a plurality of cartridges each including a casing supporting at least one fuel cell, the casing being removably received in a receptacle and including a fuel inlet connector which mates with the fuel supply connector of at least one of the receptacles when the casing is received in a receptacle, and an electrical connector which mates with the electrical connector of at least one of the receptacles when the casing is received in a receptacle, each fuel cell being configured to convert chemical energy into electricity;

a power bus inside the housing and electrically coupled to the respective electrical connectors and selectively coupled to a load; and

a control system electrically coupled to the power bus and configured to monitor at

least one operational condition of the power bus, and wherein the cartridges ~~are hot swappable~~ can be individually removed from the housing while the remaining cartridges continue to produce electricity.

291. (Currently Amended) A fuel cell power system in accordance with claim 290, and wherein a plurality of fuel cells are supported by each casing.

292. (Currently Amended) A fuel cell power system in accordance with claim 290, and wherein a casing is removable from the housing while the fuel cells of the remaining casings continue to supply power to the power bus.

293. (Currently Amended) A fuel cell power system in accordance with claim 290, and wherein each receptacle further includes a waste connector, and wherein each casing further includes a waste connector which mates with the waste connector of the receptacle when the casing is received in a receptacle.

294. (Currently Amended) A fuel cell power system in accordance with claim 290, and wherein the locations and configurations of the connectors are selected such that a casing is selectively receivable in any of a number of the receptacles.

Claims 295 and 296 (Cancelled).

297. (Currently Amended) A fuel cell power system comprising:

a plurality of terminals;

at least one fuel cell electrically coupled with the terminals and configured to convert chemical energy into electricity;

a power supply, different from the fuel cells; and

a control system coupled to the power supply and configured to receive electricity from the power supply at least at some times, and which is further operably coupled with the at least one fuel cell, and wherein the control system ~~being~~ is configured to monitor at least one operational condition of the power supply.

Claim 298 (Cancelled).

299. (Currently Amended) ~~The fuel cell power method according to claim 298 and further comprising~~ A fuel cell power method comprising:

providing a housing;

providing a plurality of terminals;

providing at least one fuel cell within the housing and electrically coupling the fuel cell with the terminals;

converting chemical energy into electricity using the at least one fuel cell;

defining ~~the~~ a control system using a plurality of distributed controllers; and

controlling a bleed valve using ~~a~~ the control system to selectively purge non-fuel diluents from the at least one fuel cell.

Claims 300-301 (Cancelled).

302. (Currently Amended) ~~The fuel cell power method according to claim 298 wherein~~ A fuel cell power method comprising:

providing a housing;

providing a plurality of terminals;

providing ~~at least one fuel cell comprises providing~~ a plurality of fuel cells~~, the method further comprising~~ within the housing and electrically coupling the fuel cell with the terminals;

converting chemical energy into electricity using the plurality of fuel cells;

controlling a bleed valve using a control system to selectively purge non-fuel diluents from the at least one fuel cell; and

selectively deactivating one of the fuel cells and providing electricity to the terminals from the remaining fuel cells.

303. (Currently Amended) The fuel cell power method according to claim ~~298~~ 302, and wherein the selective purging further comprises periodically opening the bleed valve using the control system.

304. (Currently Amended) The fuel cell power method according to claim ~~298~~ 302, and wherein each fuel cell has an anode side, and a cathode side and wherein the selective purging comprises draining non-fuel diluents from the anode side of ~~the~~ at least one of the plurality of fuel ~~cell~~ cells.

305. (Currently Amended) ~~The method according to claim 198 further comprising defining the at least one fuel cell using~~ A fuel cell power method comprising:

providing a housing;

providing a plurality of terminals;

providing at least one fuel cell within the housing and electrically coupling the fuel cell with the terminals, and wherein the at least one fuel cell in defined by using a plurality of fuel cells provided in a plurality of cartridges;

converting chemical energy into electricity using the fuel cell;

controlling a bleed valve using a control system to selectively purge non-fuel diluents from the at least one fuel cell; and

providing fluid communication between the cartridges and the bleed valve using a manifold.

306. (Currently Amended) The method according to claim ~~298~~ 305, and further comprising controlling the operation of the bleed valve using a bleed timer which is operably coupled to the control system.

307. (Currently Amended) The method of claim ~~298~~ 305, and further comprising providing an operator interface having a display; coupling the operator interface to the control system; sensing an electrical condition of ~~the~~ at least one of the plurality of fuel ~~cell~~ cells using the control system; and configuring the operator interface to indicate the electrical condition of the at least one fuel cell which is being sensed.

Claim 308 (Cancelled).

309. (Currently Amended) ~~The fuel cell power method according to claim 308 and further comprising~~ A fuel cell power method comprising:

providing a housing;

providing a plurality of terminals;

providing at least one fuel cell within the housing and electrically coupling the at least one fuel cell with the terminals;

providing a control system, and defining the control system using a plurality of distributed controllers;

coupling the operator interface to the control system;

controlling an operational parameter of the at least one fuel cell using the control system;

converting chemical energy into electricity using the at least one fuel cell;

monitoring an electrical output condition of the at least one fuel cell using the control system; and

indicating the electrical output condition monitored by the control system by utilizing an operator interface.

310. (Currently Amended) The fuel cell power method according to claim ~~308~~ 309, and further comprising defining the at least one fuel cell using a plurality of polymer electrolyte membrane fuel cells.

311. (Currently Amended) The fuel cell power method according to claim ~~308~~ 309, and further comprising defining the at least one fuel cell using a plurality of fuel cells.

312. (Original) The fuel cell power method according to claim 311 and further comprising individually selectively deactivating at least one of the fuel cells; and providing electricity to the terminals with another of the active fuel cells.

313. (Currently Amended) The fuel cell power method according to claim ~~308~~ 309, and further comprising locating the operator interface for observation from a location which is ~~the~~ exterior ~~of~~ to the housing.

314. (Currently Amended) The fuel cell power method according to claim ~~308~~ 309, and further comprising using the operator interface to emit a ~~human~~ humanly perceptible signal.

315. (Currently Amended) The fuel cell power method according to claim ~~308~~ 309, and further comprising receiving an operator ~~inputs~~ input from the operator interface ~~via~~ by way of an interface ~~switches~~ switch.

316. (Currently Amended) The method of claim ~~308~~ 309, and further comprising defining the at least one fuel cell using a plurality of fuel cells, and wherein the fuel cells are further defined by multiple cartridges removably supported by the housing, and wherein the method further ~~comprising individually~~ comprises removing selected ~~ones of the~~ cartridges from the housing; and providing electricity to the terminals using the remainder of the cartridges.

Claim 317-320 (Cancelled).

321. (Currently Amended) ~~The fuel cell power method according to claim 317 and further comprising~~ A fuel cell power method comprising:

providing a plurality of terminals;

providing a plurality of fuel cells and electrically coupling the fuel cells with the terminals;

providing a power supply different from the fuel cells, and defining the power supply using a battery;

providing a control system;

providing charge circuitry which is electrically coupled with at least one of the plurality of fuel cells;

configuring the power supply to selectively supply electricity to the control system at least at some times;

monitoring at least one operational condition of the power supply using the control system;

selectively charging the battery, ~~responsive~~ in response to control from the control system, ~~using~~ and utilizing the charge circuitry which is electrically coupled to the at least one fuel ~~cells~~ cell;

converting chemical energy into electricity using the plurality of fuel cells;

individually selectively deactivating one of the fuel cells while another of the fuel cells actively continues to convert chemical energy into electricity; and

providing electricity to the terminals from the active fuel cells.

322. (Currently Amended) The fuel cell power method according to claim ~~317~~ 321, and further comprising indicating the at least one operational condition using an operator interface which is operably coupled with the control system.

323. (Currently Amended) The fuel cell power method according to claim ~~317~~ 321, and further comprising defining the control system using digital electronics.

324. (Currently Amended) The fuel cell power method according to claim ~~317~~ 321, and further comprising defining the fuel cells with a plurality of cartridges which are removably supported by a housing.

Claims 325-331 (Cancelled).

332. (Currently Amended) ~~The fuel cell power method according to claim 330 and further comprising at least at times~~ A fuel cell power method comprising:

providing a housing;

providing at least one fuel cell within the housing;

providing a plurality of terminals;

providing a control system;

providing an operator interface and coupling the operator interface to the control system;

electrically coupling the at least one fuel cell with the terminals;

supporting a temperature sensor in the housing to sense a temperature in the housing, and coupling the temperature sensor to the control system;

moving air inside the housing using a fan supported by the housing;

controlling the fan in response to the sensed temperature using the control system;

converting chemical energy into electricity using the at least one fuel cell;

determining ~~the~~ an output voltage of the at least one fuel cell;

indicating the temperature sensed by the control system using the operator interface;

determining the electrical efficiency of the at least one fuel cell based on the output voltage using circuitry electrically coupled to the control system; and

varying the speed of the fan in response to the determined electrical efficiency, ~~using~~ utilizing the control system.

333. (Currently Amended) The fuel cell power method according to claim 332 and further comprising defining the at least one fuel cell using a plurality of fuel cells; determining the output voltage of each of the fuel ~~cell~~ cells; and determining the efficiency of each of the fuel ~~cell~~ cells by dividing the output voltage of ~~that~~ the respective fuel ~~cell~~ cells by a theoretical maximum voltage of a single fuel cell, by using the control system.

334. (Currently Amended) The fuel cell power method according to claim 333 and further comprising determining an average efficiency for the respective fuel cells using the control system; and controlling the speed of the fan based ~~on~~ upon the average efficiency ~~using~~ which has been determined by the control system.

335. (Currently Amended) The fuel cell power method according to claim ~~330~~ 332, and further comprising detecting a temperature outside the housing by using a sensor

which is supported by the housing and which is further electrically coupled to the control system.

336. (Currently Amended) The fuel cell power method according to claim 335 and further comprising providing an air passage supported by the housing and located between the inside of the housing and the ambient; positioning a selectively moveable vane ~~located~~ within the air passage, ~~using the control system,~~ and wherein the vane ~~being~~ is selectively moveable between an open position and a closed position; and controlling the relative position of the vane at least partially in response to the temperature outside the housing by way of the control system.

337. (Currently Amended) The fuel cell power method according to claim ~~330~~ 332, and further comprising defining the control system by using a plurality of distributed controllers.

Claims 338-346 (Cancelled).

347. (Currently Amended) ~~The~~ A fuel cell power method ~~according to claim 345 and further~~ comprising:

providing a housing;

providing a plurality of terminals;

providing at least one fuel cell within the housing;

electrically coupling the at least one fuel cell with the terminals;

converting chemical energy into electricity using the at least one fuel cell;

selectively removing waste fluid from the at least one fuel cell using a bleed valve;

monitoring an electrical output condition of the at least one fuel cell and controlling the bleed valve, using a control system;

indicating the electrical condition using an operator interface coupled with the control system;

providing a fuel gas sensor which is positioned within the housing; and

detecting the concentration of a fuel gas inside of the housing by using ~~a~~ the fuel gas sensor which is supported by the housing and which is electrically coupled to the control system.

348. (Currently Amended) The fuel cell power method according to claim ~~345~~ 347, and further comprising defining the control system by using a plurality of distributed controllers.

Claims 349-352 (Cancelled).

353. (Currently Amended) A fuel cell power method comprising:

providing a housing having an inside cavity and an outside surface, and having a plurality of receptacles accessible from outside of the housing, the receptacles respectively including an electrical connector and a fuel supply connector;

providing a plurality of ~~hot swappable~~ cartridges each including a casing supporting at least one fuel cell, and wherein the casing ~~being~~ is removably received ~~in~~ within a receptacle and further including a fuel inlet connector which mates with the fuel supply connector of at least one of the receptacles when the casing is received in a receptacle,

and an electrical connector which mates with the electrical connector of at least one of the receptacles when the casing is received in a receptacle;

selectively coupling respective electrical connectors of a power bus which is positioned inside the housing to a load and electrically coupling the plurality of cartridges having at least one fuel cell to the power bus;

converting chemical energy into electricity using ~~selected ones~~ at least one of the fuel cells; and

monitoring at least one operational condition of the power bus using a control system which is electrically coupled to the power bus, and wherein the respective cartridges may be operably removed from the housing while the remaining cartridges continue to produce electricity.

354. (Currently Amended) A fuel cell power method in accordance with claim 353 and further comprising providing a plurality of fuel cells which are enclosed within ~~in~~ each ~~casing.~~ casing.

355. (Original) A fuel cell power method in accordance with claim 353 and further comprising selectively removing a casing from the housing while the fuel cells of the remaining casings continue to supply power to the power bus.

356. (Currently Amended) A fuel cell power method in accordance with claim 353 and further comprising providing respective waste connectors for each receptacle and casing, and wherein the method further ~~comprising~~ comprises locating the waste connector

of each casing to mate with the waste connector of the receptacle when the casing is received ~~in~~ within the receptacle.

357. (Currently Amended) A fuel cell power method in accordance with claim 353 and further comprising configuring the locations and ~~configuration~~ arrangement of the respective connectors such that a casing is selectively receivable in any one of a number of the respective receptacles.

358. (Currently Amended) A fuel cell power method comprising:

providing a plurality of terminals;

electrically coupling at least one fuel cell with the terminals;

providing a power supply, different from the fuel cells, and coupling the power supply to a control system, to provide electricity to the control system, and wherein the control system is electrically coupled to the at least one fuel cell;

converting chemical energy into electricity using the at least one fuel cell; and

monitoring at least one operational condition of the power supply using the control system.